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# 1978 Seminar Schedule

## for courses held January 16 through April 21, 1978

- Data Communications • Word Processing
- Computer Operations • EDP Productivity
- Introduction to EDP • Minis and Micros •
Computer Performance Measurement • DBMS

TED NELSON
SWARTHMORE COLLEGE
SWARTHMORE, PA 19081

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# Datapro Seminar Schedule

**1978**

## A complete list of all courses held January 16 through April 21, 1978

- **NEW** **Structured Problem Solving:** Bringing Productivity Improvements to EDP

- **Data Processing:** An Introduction to Concepts and Systems

- **Computer Performance Measurement:** Tools and Techniques for Increased System Productivity

- **Data Communications:** An Introduction to Concepts and Systems

- **Data Communications:** Advanced Concepts and Systems

- **Word Processing:** Guidelines for Planning, Design and Implementation

- **Effective Computer Operations Management**

- **Data Base Management Systems:** General Concepts and Planning Guidelines

- **Minicomputers and Microcomputers:** Selection and Usage Guidelines

To register, or for course outlines, call toll-free

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DATAPRO RESEARCH CORPORATION

McGraw Hill

# Datapro Seminar Schedule

Complete list of courses
January 16 through April 21, 1978

The latest lineup of Datapro seminars designed to provide the newest facts, ideas and know-how to help you stay abreast of these fast-changing areas of information processing.

| | New York | Washington | San Francisco | Chicago | Philadelphia (Cherry Hill, NJ) |
|---|---|---|---|---|---|
| **NEW** **STRUCTURED PROBLEM SOLVING: Bringing Productivity Improvements to EDP.** Productivity improvement programs within the EDP department are examined with an eye toward utilization in a range of DP and organizational environments. | Jan. 16-17 | Mar. 20-21* | Mar. 8-9 | Apr. 20-21 | — |
| **DATA PROCESSING: An Introduction to Concepts and Systems**—Equips the newcomer to EDP with an understanding of what computers can and cannot do, their applications, techniques, modes of operations, how to acquire and apply a computer, and much more. | Feb. 27-Mar. 1 | Mar. 15-17 | Jan. 25-27 | Mar. 20-22 | Apr. 5-7 |
| **COMPUTER PERFORMANCE MEASUREMENT: Tools and Techniques for increased System Productivity**—For anyone concerned with evaluating the use that is made of the EDP resource as well as those implementing programs to improve that use. | Feb. 1-3 Apr. 17-19 | Feb. 6-8* Mar. 27-29 | Mar. 1-3 | Mar. 13-15 | — |
| **DATA COMMUNICATIONS: An Introduction to Concepts and Systems**—Designed to provide EDP and data communication systems analysts, planners, and decision makers with a thorough grounding in the terminology and operating concepts of data communications. | Feb. 1-3 | Feb. 15-17* Apr. 10-12 | Jan. 18-20 Mar. 29-31 | Mar. 1-3 | Mar. 15-17 |
| **DATA COMMUNICATIONS: Advanced Concepts and Systems**—An intensive summary overview of new developments — carriers, services, tariffs, protocols, etc. — that offer opportunities to improve network cost-performance or justify previously uneconomical applications. | Apr. 17-18 | Mar. 20-21 | Apr. 3-4 | — | — |
| **WORD PROCESSING: Guidelines for Planning, Design, and Implementation**—An in-depth presentation that encompasses evaluation criteria, techniques of data collection, systems design and implementation. Topics emphasized include equipment selection and cost justification. | Mar. 1-3 Apr. 19-21 | Feb. 1-3 Mar. 20-22 | Feb. 8-10 Apr. 5-7 | Jan. 25-27 Mar. 29-31 | — |
| **EFFECTIVE COMPUTER OPERATIONS MANAGEMENT**—Responds to the ever-growing demands of top management for accountable and tightly controlled EDP operations. The most effective methods, procedures and techniques are examined. | Jan. 23-25 Mar. 27-29 | Feb. 8-10 Mar. 20-22 | Mar. 1-3 Apr. 12-14 | Feb. 15-17 Apr. 5-7 | Mar. 6-8 |
| **DATA BASE MANAGEMENT SYSTEMS: General Concepts and Planning Guidelines**—Offers a full understanding of the concepts of data base management, and explains what these systems are all about, where their real economic advantages lie, and how to start moving into DBMS. | Jan. 25-27 Apr. 3-5 | Feb. 15-17* Apr. 17-19 | Jan. 18-20 Mar. 29-31 | Feb. 1-3 Apr. 12-14 | Mar. 15-17 |
| **MINICOMPUTERS AND MICROCOMPUTERS: Selection and Usage Guidelines**—Analyzes today's small computers and how their new roles are changing all the traditional rules of EDP. Guidelines are presented for understanding, selecting, and utilizing today's minis and micros. | Feb. 9-10 Mar. 30-31 | Mar. 6-7 | Feb. 23-24 Apr. 13-14 | Jan. 26-27 | Mar. 16-17 |

*Seminar held at Quality Inn; all others in Washington held at Ramada Inn.

**Fee:** $425 for Datapro subscribers, $475 for non-subscribers. Includes all course materials and luncheons.

**Important: 10% discount earned on prepaid registration received 30 days before start of course.**

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## Enrollment Information

**Accommodations:** Seminars will be conducted at the hotels shown below. Cost of rooms is not included. Reservations should be made directly with these hotels, where a block of rooms is being reserved for registrants until two weeks before each seminar. Be sure to mention Datapro and the seminar you plan to attend when making reservations.

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| Holiday Inn, Mart Plaza | Barbizon Plaza |
| 350 North Orleans Street | 106 Central Park South |
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| 480 Sutter Street | 2349 West Marlton Pike |
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**Washington**

| Ramada Inn | Quality Inn |
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| Rosslyn | Pentagon City |
| 1900 North Fort Myer Drive | 300 Army Navy Drive |
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**a three-day
seminar**

# Word Processing

## Guidelines for Planning, Design, and Implementation

| | |
|---|---|
| Chicago ......... | Jan. 25-27 |
| | Mar. 29-31 |
| Washington ........ | Feb. 1-3 |
| | Mar. 20-22 |
| San Francisco ..... | Feb. 8-10 |
| | Apr. 5-7 |
| New York ......... | Mar. 1-3 |
| | Apr. 19-21 |

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# Word Processing: Guidelines for Planning, Design

*An in-depth presentation on word processing for systems analysts, word processing supervisors and managers, administration managers, and others interested in word processing. Encompasses evaluation criteria, techniques of data collection, systems design and implementation. Topics emphasized include equipment selection and cost justification.*

## Course Objectives

This comprehensive seminar approaches the word processing area from two perspectives: an overview of concepts, systems and products, and an application of this more general information to very specific office functions. Beginning with a basic treatment of word handling tasks and their related personnel, it will show how word processing functions can be evaluated and how decisions can be made about the cost/effective selection of suitable, systems-oriented equipment. Question-and-answer periods will address special user problems and review pertinent case studies. Every area of discussion will be related to the attendees' specific goals and objectives. Guidelines and standards for measuring effectiveness of equipment and personnel will also be established. The seminar concludes with a discussion of the automated office, or the "office of the future," and describes the role of word processing in these future systems.

An extensive and detailed lecture outline with ample room for note taking is part of the seminar. Additional background materials and copies of all visual aids are included for subsequent reference.

## Who Should Attend

This seminar is designed to provide maximum benefit to word processing supervisors and managers, and administrative and office management personnel who are involved with office systems planning or with costing and buying word processing equipment. The seminar will also be invaluable for systems and data processing management personnel who are responsible for integrating the word processing function into broad, company-wide information systems.

## Course Outline

**Word Processing: Survey Techniques**

**Review of Seminar Objectives**

A. Overview on Word Processing and Office Systems
B. Conducting, Installing and Analyzing Requirements of the Word Processing Survey
C. Selling the Survey
D. The Management Report

**Review Survey Outline**

A. Planning, Orientation, Data Collection, Communication, Decision-Making, Documentation, Implementation

**Area Selection and Management Introduction**

**The Management Orientation**

**Data Collection Outline**

A. Preliminary Data
B. Setting Objectives and Restraints
C. Document Analysis
D. Time Analysis

**Preliminary Data**

A. Floor Plan, Organization Information, Equipment Inventory, Trends, Goals and Restraints

**Document Analysis**

A. Coding the Documents
B. Logging

**Analysis of Document Data by:**

A. Secretary, Author, Document, Volume, Turnaround Requirement, Destination, Origination, Kind of Work

**Analysis of:**

A. Type of System, e.g. Central, Work Group
B. Dictation Product Application
C. Mag Keyboard Application
D. Staffing

**Time Analysis**

A. Need For, Tools Available, Task List, Time Line

**Case Studies**

A. A One-Secretary Study
B. A Large Reorganizational Survey
C. Evaluation of an Existing Word Processing Center

**Dictation Media**

A. Continuous-Loop Systems
B. Standard Cassette Dictation
C. Non-Standard Cassette Dictation
D. IBM Magnetic Disk

**Product Types**

**Dictation Application Types**

# and Implementation

A. Reactive, Creative, Administrative, Priority; Special Applications

### Office System Types

A. The Use of Dictation Systems in: Traditional Secretarial Environments, Work Group or Team Secretarial Systems, Centralized Secretarial Systems, Special Application Environments
B. Trends in Office System Organization

### Future Trends

A. Codaphone and the Impact of Telephone Systems on the Dictation Equipment Industry
B. The Impact of EDP
C. The Impact of Word Processing
D. The Impact of Merged Applications of WP and DP
E. Microprocessors and Dictation Systems
F. Electronic Mail and Information Transmission Considerations
G. Multi-Functional Products

### Mag Keyboard Media

A. Card, Internal, Cassette, Diskette, DP Disk

### Product Types

A. Media Keyboard, Correcting Selectric Media Keyboard, Memory Keyboard, Correcting Selectric Memory Keyboard, CRT Keyboard, Programmable CRT Keyboard, Customer-Programmable CRT Keyboard (Minicomputers), Quasi-Shared Logic (Distributed Processing), Shared Logic, Time Shared

### Application Identification

A. Input Analysis, Communications Requirements, System Identification, The Clerical System

### Office System Types

A. The Use of Mag Keyboards in: the Traditional Secretarial Environment, the Work Group or Team Environment, Centralized Secretarial Systems, the Application Environment
B. Trends in Office Systems Organization

### Trends and Future Trends

A. WP/DP Merger
B. OCR
C. Printers and High-Speed Printers
D. Electronic Mail
E. Programmable Communications
F. Microprocessors and Minicomputers
G. Future Electronics and Bubble Memory

### Document Analysis

A. Input, Format, Purpose, Priority, Destination

### Time Analysis

A. Distribution, Function Level, Peaks and Valleys

### Future Trends and User Needs

### Organizational Trends by Industry

A. Traditional Systems
B. Work Group or Teams
C. Specialized Functions, i.e. Word Processing Centers or Special Applications Systems

### Multi-Function Devices

A. Current Products Reviewed
B. Administrative Requirements: Data Collection, Records Processing, Administrative Systems, Records Retention/Retrieval
C. Test Processing Needs (The Short/Long Document Dilemma)
D. Telecommunication Requirements
E. Special Format or Application Requirements
F. Pricing Considerations

### Dictation/Communications Devices

A. Current Products Reviewed
B. New Products Under Development
C. Sales Potentials Reviewed
D. Relating Needs to New Product Potentials

### Copier/Duplicator

A. Statistics Review: Run Length, Copier Walk, Applications Considered, Volumes Considered, Xerox Historical Machine Profiles
B. Placing the Copier in the System
C. New Market for the Copier

# Word Processing

## Guidelines for Planning, Design, and Implementation

Please register the person(s) named below for the seminar checked below.

☐ Jan. 25-27, Chicago

☐ Feb. 1-3, Washington

☐ Feb. 8-10, San Francisco

☐ Mar. 1-3, New York

☐ Mar. 20-22, Washington

☐ Mar. 29-31, Chicago

☐ Apr. 5-7, San Francisco

☐ Apr. 19-21, New York

Name of Registrant(s)

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# The Instructional Staff

The instructional staff includes Paul Truax, Edward Smith, and Jean Strong. Paul Truax and Edward Smith are founders and principals of Truax, Smith and Associates, Inc., a major word processing and office consulting firm located in Wilmington, Delaware. Jean Strong has been a federal government consultant since 1973 and has directed several legislative projects for Congress. She joined Truax, Smith and Associates in 1976. The firm's consulting services range from equipment evaluation to complete in-depth office systems analyses. Messrs. Truax and Smith and staff have conducted seminars at numerous industry meetings and are frequent and well known contributors to industry media. They have written various articles for *Administrative Management Magazine, Lawyers Newsletter, Words, Word Processing, and Word Processing Report.*

# Other Datapro Seminars

● **Computer Performance Measurement: Tools and Techniques for Increased System Productivity**—New York, Feb. 1-3, Apr. 17-19; Washington, Feb. 6-8, Mar. 27-29; San Francisco, Mar. 1-3; Chicago, Mar. 13-15.

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## In-House Seminars

Datapro has a broad curriculum of seminars on information processing and information management which can be presented at your organization on an in-house basis, in addition to the seminars mentioned elsewhere in this brochure. These seminars can also be tailored to meet your specific needs. For more information, check the "in-house" box on the registration form.

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a two-day
seminar

# Data
# Communications

## Advanced
## Concepts
## and Systems

| | |
|---|---|
| **Washington** | **Mar. 20-21** |
| **San Francisco** | **Apr. 3-4** |
| **New York** | **Apr. 17-18** |

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# Data Communications: Advanced Concepts a

*New carriers, new services, new tariffs, new hardware, new network concepts, new protocols, and new technology all mean new opportunities for improved network cost-performance, or opportunities to justify previously uneconomical applications. This seminar offers the busy manager an intensive summary overview of these developments and their applications potential and significance.*

## Course Objectives

Significant changes are occurring in the data communications field. All too often, however, day-to-day duties prevent system designers or managers from keeping fully abreast of some of these developments. This seminar is designed to fill that critical void. The program provides a comprehensive and intensive overview briefing on what's happening in data communications. Each subject area is addressed as to its essential aspects, with an emphasis on application significance. Technical aspects are generally limited to those necessary for familiarization, or to enable discussion of functional significance. And to minimize the drain on the busy manager/designer's time, we've wrapped it up in a fast-paced two-day program.

In a situation where almost each topic could be a full seminar, this is not a how-to-do-it program. It is, however, an important orientation review of key factors, application relevance or significance, cost-performance aspects, and a thorough introduction to the concepts and pertinent issues in each case.

## Who Should Attend

The seminar is designed to provide maximum benefits to the practicing data communications analyst/manager or systems planner. Also, suppliers of communications systems, services, and components will benefit from this in-depth treatment of new concepts and emerging trends. A knowledge of data communications terms, concepts and contemporary practice is a prerequisite for this seminar.

## Course Outline

**Digital Transmission Systems**

A. Background; Low Error Rates of Digital Systems
B. T-Carrier
 1. Concept, Frame Structure, and Bipolar Signalling
 2. The Digital Hierarchy: Its Structure and Attendant Thru-System Delays
C. Dataphone Digital Service (DDS)
 1. Bit Rates, Data Access Line Areas, Operating and Pending Cities of Service, Rate Elements and Rates, and Error Performance
 2. The Data Service Unit: Functions
 3. Multipoint Service: The Quantitative Effects of Thru-System Delays on Response Time and Throughput
 4. Off-net Access
 5. Trade-offs between DDS and MPL
D. Dataphone Switched Digital Service (DSDS)
 1. Concept, Bit Rates, Service Cities, Connect Time, Rate Elements and Rates

**Value-Added Networks**

A. Background
 1. The Value-Added Concept
 2. Packet-Switching Concepts: Packets, Store-and-Forward Transmission, Dynamic Alternate Routing, Virtual Circuits, EDC, Speed, Code, and Protocol Conversion
B. Telenet
 1. The System: Service Cities, Services, Applications
 2. Host and Terminal Interfaces: Direct Access, Access Controllers, Network Interface Protocol
 3. Relationships to Other Service Offerings
C. Tymnet and Other Value-Added Networks, Current and Projected

# and Systems

## High-Level Data Link Controls

A. Overview: HDLC, ADCCP, DDCMP, SDLC, UDLC, BDLC, etc. Gross Comparisons and Differences
B. Characteristics
  1. The Frame, Flag, Control Field, Acknowledgements, Full Duplex Operations
  2. Quantitative Effects on Performance

## Modems and Multiplexers

A. Split-Stream Modems and Multiplexers: Concepts, Combinations, Application Example and Economics
B. Statistical Multiplexers
  1. Background: Traditional Advantages and Disadvantages of Multiplexing and Concentration
  2. Statistical Multiplexing: A Happy Compromise
  3. Representative Hardware: Loading Ratios, Data Compression, Networking Role
C. Inverse Multiplexing
  1. Concept, Hardware, and Economics
D. Modem-Sharing Units
  1. Concept, Hardware, and Economics
E. Modem Developments
  1. Concepts and Potential Benefits of Multi-Speed and Fast-Poll Modems
  2. Compromising Factors in Terminal Controllers

## Distributed Computing and Networking

A. Traditional Needs, Approaches, and Issues
B. New Approaches
  1. SNA: A Hierarchical Centralized Network, Components, Objectives
  2. Fully Distributed or Homogenous Networks The Univac and NCR Architectures
  3. Ring Networks

## Network Protocols

A. SNA: Protocol Levels, Transmission Blocks, Structure
B. The Univac and NCR Protocols
C. X.25, The Packet Network Interface Protocol

## Satellite Channels and Services

A. Concepts: The Path, Path Quality, Propagation Delay, Performance Implications
B. DOMSAT Carriers and Services, AT&T's Role
C. IBM and Satellite Business Systems (SBS)

## Front Ends and Remote Communication Processors

A. Functional Types, Their Roles, Application Factors
B. Front-End Categories in terms of CPU Relief, the Critical Role of TP Software in Achieving Productivity Improvement from Front Ends
C. Performance Factors and Evaluation Criteria

## Network Management

A. Tech Control, Fault Isolation, Circuit vs. Functional Testing, Patching and Switching, Bit Error Rate Test Sets, DB Meters, etc. Datascopes, Centralized Network Control
B. Administration: Organization and Staffing

**The current situation in various regulatory issues will be presented as pertinent to each topic.**

# Data Communications
## Advanced Concepts and Systems

Please register the person(s) named below for the seminar checked below.

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☐ Apr. 3-4, San Francisco

☐ Apr. 17-18, New York

Name of Registrant(s)

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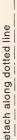    ☐ Subscriber          ☐ Non-subscriber

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## About the Instructor

Ralph G. Berglund is a well-known management and technical consultant in data communications. A frequent speaker at corporate seminars and such industry meetings as the Info conferences, the Interface conferences, AMA seminars, CICA, ASM, and DPMA, Mr. Berglund is also the data communications editorial advisor to *Datamation* magazine, and the data communications consultant to Datapro Research Corporation.

Of his 18 years in the data communications field, 11 have been spent as a professional consultant, performing planning, design, and improvement of data communication systems, and analyzing and forecasting data communication trends. Prior to his affiliation with *Datamation,* he was the data communications advisor to *Modern Data* magazine for eight years, and authored most of the Communications Clinics which appeared in the magazine.

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DATAPRO RESEARCH CORPORATION
1805 Underwood Boulevard, Delran, NJ 08075

a two-day
seminar

# Structured
# Problem
# Solving

## Bringing Productivity
## Improvements to EDP

| | |
|---|---|
| **New York** ........ | **Jan. 16-17** |
| **San Francisco** ...... | **Mar. 8-9** |
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# Structured Problem Solving: Bringing Producti

*There are many new developments in the world of EDP, but productivity is still the name of the game. This two-day seminar uniquely incorporates the best principles of the structured programming concept into an instructional program that can help improve the productivity of your EDP department (and possibly your entire company).*

## Course Objectives

Don't let the title mislead you. This is not another seminar on structured programming. Rather, this seminar builds on the concepts and practices of structured programming, and shows how these principles can be applied to EDP management problems in general, and to systems management problems in particular. This innovative two-day seminar is designed to show how this can be done easily and effectively.

In order to convey an appreciation and a working understanding of "top-down" structured programming concepts and tenets, we spend some time on the theory and practical implications of this improved discipline. In addition, we discuss the set of questions which we believe management must consider.

The seminar concludes with a structured walk through the Grace Plan for the installation of practices that lead to improved EDP productivity.

## Who Should Attend

This new Datapro course is designed for executives and senior managers whose organizations use information systems and/or who have responsibility for systems and data processing. It will also be of direct benefit to systems development managers, programming managers, operations managers, training managers, project leaders, system architects, and quality control and auditing managers.

## Course Outline

**Introduction**
A. Seminar Objectives
B. Seminar Format
   1. Lectures, Discussions, Workshops
C. Seminar Agenda
D. Definitions of Principal Terms

**The Context**
A. Software Practices and Problems
B. Lessons Learned from Construction of Operating Systems
C. The Importance of Structure in Managing Complexity
D. Reasons for Adopting Structured Practices
   1. Privacy Legislation
   2. Hardware Cost Breakthroughs
E. Designing for Change
F. Systems Environments for the Late 70's, early 80's

**Structured Programming**
A. Theory and Definitions
B. Control Structures
C. Areas of Wide Agreement and Controversy
D. A High-Level View of the Programming Task
E. Structured Problem Solving
F. A Structured Approach to the Systems Life Cycle
   1. Structured Analysis, Development, Testing, and Use
G. Software Engineering and Manufacturing

**Top-Down Structured Thinking**
A. Top-Down vs. Bottom-Up Development and Systems Integration
B. How to Find the Top of a Systems Problem
C. Top-Down Approaches to:
   1. The Planning Process

*Here's what your Datapro Subscriber colleagues are saying:*

2. Cost Analysis
3. The Privacy Issue
4. Other Examples

D. Why Top-Down Solutions to Significant Problems Are Never Achieved in a Purely Top-Down Way

**The Structured Walk-Through**

A. The Role of Management
B. The Planning Algorithm
C. How Walk-Throughs Differ With Phases of the Life Cycle
D. Correctness Proofs
E. System Visibility
F. Practical Problems in Implementation

**Structured Language Usage**

A. Structured English
B. Structured Procedure-Oriented Languages
C. Examples of Structured Programs
D. Future Programming Languages
E. Changing Your Programming Language
F. Preprocessors and Other Software Tools

**Structured Organization**

A. Implications of Installing a Structured Discipline
B. Problems with the Chief Programmer Team Concept and How to Solve Them

**Structured Control**

A. Essential Properties of a Control System
    1. Simplicity
    2. Visibility
B. A Working, Top-Down, Structured Project Control System
C. Documentation Control
D. Service and Control Relationships
E. Development and Control Tools
F. Control Implications

**Training Considerations**

A. A Structured Plan for Improving Current Training Programs

**Putting It All Together**

A. A Structured Walk-Through of the *Grace Plan* for Improving EDP Productivity

**Bibliography**

# Course Materials

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# Structured Problem Solving
## Bringing Productivity Improvements to EDP

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## About the Instructor

The principal instructor for all seminars is Lon Grace, whose company was founded in the belief that many of the lessons learned in the definition, development and support of complex software systems can be effectively transferred to management tasks in general. Mr. Grace has spent the past 20 years in management positions with General Dynamics, RCA and the Travelers Corporation. Earlier, he was a member of the faculty at Trinity College.

His assignments have ranged from technical leadership on small projects, through computer center management to line responsibility for several hundred professional people geographically dispersed and engaged in the development of software for the complete RCA computer product line. He has installed and used the practices advocated in his seminars.

Mr. Grace holds degrees from Trinity and Yale. He is a Fellow of the British Computer Society and a member of a number of other professional and honorary organizations, including Phi Beta Kappa. He is a past National Lecturer for the Association for Computing Machinery, and has been active in various national and international technical, standards and management bodies all of his professional life.

## Other Datapro Seminars

● **Computer Performance Measurement: Tools and Techniques for Increased System Productivity**—New York, Feb. 1-3, Apr. 17-19; Washington, Feb. 6-8, Mar. 27-29; San Francisco, Mar. 1-3; Chicago, Mar. 13-15.

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● **Effective Computer Operations Management**—New York, Jan. 23-25, Mar. 27-29; Washington, Feb. 8-10, Mar. 20-22; Chicago, Feb. 15-17, Apr. 5-7; San Francisco, Mar. 1-3, Apr. 12-14; Philadelphia, Mar. 6-8.

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**a three-day
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# Effective
# Computer
# Operations
# Management

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| Washington | Feb. 8-10 |
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# Effective Computer Operations Managemen

*This seminar responds to the ever-growing demands of top management for accountable and tightly controlled EDP operations. The most effective methods, procedures and techniques are examined.*

## Course Objectives:

Acknowledging the increasing magnitude of each organization's investment in EDP and the intricate role data processing plays in supporting and controlling day-to-day operation (such that in some cases operation virtually comes to a standstill when the EDP system is unavailable), management has become more and more concerned about insuring the quality and the effectiveness of work management procedures and controls implemented in the computer operation area.

The purpose of this seminar is to discuss the controls, techniques, and procedures of effective computer operations management, offering down-to-earth discussion on implementation, problems, successes and failures, all with the objective of having the participant carry away some ideas, practices, techniques, etc., which will permit more effective management of their installation.

## Who Should Attend:

This seminar is designed for managers, supervisors and key personnel working in the computer center. In addition, individuals from user areas: remote stations, senior programmers and senior analysts—all who work closely with the computer center should find this session quite informative.

## Course Materials

An extensive and detailed lecture outline with ample room for note taking is part of the seminar. Additional background materials and copies of all visual aids are included for subsequent reference.

## Course Outline

**Defining the Objectives of Computer Operations Management**—A General Statement

A. Objectives Related to Operating Environment
1. Batch
2. On-Line Batch
3. On-Line Interactive
4. A Mixture

B. Prioritizing the Objectives
1. Service
2. Cost Effectiveness

**Increasing the Effectiveness of Computer Operations**— Development of an Operations Work Plan

A. Defining Specific Operating Objectives
1. Determination of User Requirements
2. The Acceptable Performance Level—Defined
3. User Contracts
4. User Interface—The Right Relationship
5. Operations Management and Cost Effectiveness

B. Formulating the Operations Work Plan from the Defined Objectives
1. Development of an Operations "Want List"
2. Management Prioritizing
3. Distribution of Tasks to Work Stations
4. Formulating the Work Station Plan
5. Plan Aggregation

C. Budgeting—An Outgrowth of Forecasted Activity Incorporating the Operations Work Plan
1. Personnel Requirements—Acknowledging Ongoing Activity Inclusive of Forecasted Volume Changes, Improvement Plans, and New Areas of Automation
2. Other Resources—Equipment, etc.

D. Measuring Operations Management's Achievements Against the Work Plan

## Organizing Operations for Effective Performance

A. Establishing Operations Structures and Reporting Lines to Insure "Accountability"
   1. Accountability Defined
   2. Organizing for It
   3. Span of Control vs. Horizontal Organization

B. Distributing Accountability
   1. Remote Support
   2. Closed/Open Shop/Middle Ground
   3. Site Control

C. Personnel Management
   1. Motivating the People Resqurce
   2. Career Pathing
   3. Training
   4. Evaluation and Upgrading Techniques
   5. The Problem Employee
   6. Maintaining Job Descriptions and Salary Levels Current

D. Effective Supplier Interface

## Computer Operations—Workflow Management

A. The Establishment of a Workflow Reporting System
   1. Productivity Reports—To Acknowledge Operations Performance
   2. Workload Reports—For Planning and Scheduling Resources
   3. Failure Reports—To Insure Resolution of Failures and as Input to Procedural Changes

B. Scheduling the Data Center
   1. Production Planning
   2. Automated Scheduling—Applying Plant Loading Techniques to the Data Center
   3. Machine Scheduling—Attempts at Optimization

C. Feedback Schemes to Improve Productivity

D. Reliability/Security
   1. Disaster Planning and Practice
   2. Fallback Procedures
   3. Controlled Machine Room Access
   4. System and Data Security

## Effective Data Control

A. The Principles of Effective Control
   1. Work Movement
   2. Audit and Logging Requirements

B. The Functional Operation of Data Control
   1. Responsibilities
   2. Work-in-Process Controls
   3. Reporting Lines
   4. Relationship to Other Work Stations

C. Effective Input/Output Controls
   1. Basic Input Controls
   2. Program Controls
   3. Output Controls
   4. Effective Use of Key to Disk

D. Magnetic Tape Library Controls
   1. Manual
   2. Automated Tape Library Management

E. Disk Management

# Effective Computer Operations Management

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## The Instructional Staff

The instructional staff includes Thomas H. Farello, Leonard Palmer, and Michael DeVincenzo. Thomas Farello is a management consultant with Ford, Bacon & Davis. Mr. Farello has extensive experience in the development and implementation of data processing operations, and is a consultant to EDP users in the area of operations management. From 1952 to 1969, Mr. Farello held positions within Clevite Corporation in the EDP area, including EDP systems designer, director of management information systems, and director of EDP operations. Leonard Palmer has been an independent management consultant specializing in the EDP computer operations area for the past several years. He has most recently performed work for the Pacific Far East Lines, the Fidelity Corp., and Automatic Data Processing. Mr. Palmer begin his EDP career with the State of California, and moved through a number of operational, technical, and management positions before becoming director of data centers at Computer Service Centers Inc. Michael De Vincenzo is manager of operations at the Manufacturers Hanover Trust Company of New York, a position he has held for the past two years. Prior to joining Manufacturers Hanover, Mr. De Vincenzo served as manager of operations at the Federal Reserve Bank in New York. He has held a range of working managerial and supervisory technical assignments in computer operations, technical support and systems software.

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a three-day
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# Data Processing

## An Introduction to Concepts and Systems

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# Data Processing: An Introduction to Concepts and

*A comprehensive, three-day introduction to the world of data processing. This seminar explains what these systems are all about, the methodologies used in developing, acquiring, managing, and operating them, and how you can get started in applying cost/effective DP systems in your department or company.*

## Course Objectives

This introductory seminar provides management and staff personnel with a full understanding of the concepts of data processing, plus the planning effort and management direction required for successful system development, acquisition, and operation.

The course initially will focus on applications categories and examples. Attendees receive a thorough grounding in the terminology of the DP industry and knowledge of the systems technology. Secondly, the course addresses methodologies proven effective in the process of systems development, including programming, and in managing operations and the user interface. Management and administration of DP and its effect on the organization are discussed. Particular emphasis is given to the process of selecting and evaluating cost/effective DP systems.

A further objective of this course is to advise attendees of the potential applications of current directions in DP technology, and the short- and long-range significance of DP market trends and directions.

## Who Should Attend

This course is designed for management or staff new to DP functions, non-DP-oriented executives participating in planning and acquisition decisions, sales, marketing, or editorial personnel requiring a DP industry overview, prospective or current users of DP desiring a state-of-the-art applications perspective, and anyone who needs general information on data processing.

## Course Outline

**Course Objectives and Registrant Introductions**
**DP Systems Overview — An Introductory Perspective**

A. Applications Categories and Examples
B. System Components — Functions and
   Interrelationships
   1. Hardware (Computers, Storage, Peripherals,
      Communications)
   2. Software (Systems, Applications)

**The Life Cycle of a DP System: The Systems
Development Process**

A. Planning
   1. Conception
   2. Preliminary Requirements
   3. Feasibility Study
   4. Cost/Benefit Analysis
B. Development
   1. Functional Specifications
   2. System Specifications
   3. Detail Systems Design
C. Implementation
   1. Programming
   2. System Test
   3. System Installation, Conversion, and Operational
      Start-up
   4. Post-Implementation Review

**Programming Methodology: A Closer Look**

A. Languages
   1. Assemblers
   2. Compilers
   3. Interpreters
   4. Macro Languages
   5. Special Purpose Languages
B. Programming Design
   1. Structured Design
   2. Modular
   3. Portable
C. Implementation
   1. Structured Programs and Virtual Systems
   2. Programming Style

# Systems

D. Testing and Debugging

E. Maintenance

**DP Operations: The Computer Room and Beyond**

A. Operating Environments

B. Achieving Effective Performance

C. Computer Performance Evaluation (Hardware and Software Monitors)

D. Workflow Management

E. Data Control

F. Conversion Planning

G. The User Interface

**Selecting and Acquiring DP Systems**

A. Who Sells What — An Overview of Vendors, Products, and Services

B. Processing Options
   1. Mainframes
   2. Minicomputers
   3. Small Business Computers
   4. Microcomputers
   5. Mixed

C. In-House vs. Outside Services

D. Preparing the Request for Proposal and Evaluating the Resulting Proposals

E. Purchase, Rent, or Lease?

F. Software — Make or Buy?

G. Contracts and Vendor Relationships

H. Maintenance

**DP Management and Administration**

A. Organizing DP

B. DP Job Descriptions and Functions

C. Effect of DP on the Organization — Clerical to Management

D. DP and Auditing

E. Security and Privacy

**Technical Briefs — A Broad Description of the What, Why, Who, and How Much**

A. Data Communications

B Data Base Management Systems

C Distributed Data Processing

D. Distributed Data Entry and Source Data Automation

E. Electronic Funds Transfer

F. Word Processing

G. Micrographics

**DP Market Overviews: Trends and Directions**

A. Computers

B. Storage

C. Peripherals

D. Communications

E. Systems Software

F. Applications Software

G. Programming Languages

H. Personnel — Management, Technical, and User

**The Future and Data Processing**

A. Personal Computing

B. The Electronic Office

C. The Point-of-Work Concept

**Summary and Conclusion**

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## An Introduction to Concepts and Systems

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## About the Instructor

George B. Bernstein is an experienced data processing professional with a broad background in many EDP disciplines. He is a program manager on the R&D staff of the Naval Supply Systems Command. He manages research programs in the areas of data entry, data handling, telecommunications, and teleprocessing, and serves as an in-house consultant on micrographics. Mr. Bernstein also has responsibility for monitoring related technologies, and assessing their impact on his organization's long-range plans. Mr. Bernstein's academic training included undergraduate work at Pennsylvania State University and post-graduate work at George Washington and Maryland Universities. His early experience was as an operations research analyst, applying computer technology to logistics problems. He held positions with the Navy at the Ships Parts Control Center and the Fleet Material Support Office, and gained experience in private industry at Planning Research Corporation. Mr. Bernstein has been involved in a number of government-wide ADP-related standardization and procurement efforts. He has published extensively (over 75 technical papers and reports), and has developed several techniques for forecasting and assessing technology.

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　　　　　　　(415) 398-8900
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**Washington DC** Ramada Inn (703) 527-4814

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**To register, call toll-free**

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In New Jersey, 609-764-0100

*For those who value information.*

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DATAPRO RESEARCH CORPORATION
1805 Underwood Boulevard, Delran, NJ 08075

## a three-day seminar

# Data Communications

## An Introduction to Concepts and Systems

| | |
|---|---|
| San Francisco | Jan. 18-20 |
| | Mar. 29-31 |
| New York | Feb. 1-3 |
| Washington | Feb. 15-17 |
| | Apr. 10-12 |
| Chicago | Mar. 1-3 |
| Philadelphia | Mar. 15-17 |

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## datapro

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# Data Communications: An Introduction to Conce

*A practical journey into the arcane world of data communications. The constantly improving cost-performance of data terminals, systems, and services can mean cost-effective systems for your business needs. Responding to the need of EDP professionals for a solid, no-nonsense introduction to the technology and the art.*

## Course Objectives

The seminar will provide a thorough grounding in the terminology and operating concepts of data communications. The program will also provide a comprehensive and in-depth cost-performance perspective on major data transmission services and hardware. System and application performance criteria will be developed, both conceptually and quantitatively. Response time determination will be introduced, and a complete technique for throughput determination will be presented.

## Who Should Attend

EDP/teleprocessing/data communications systems analysts, planners, and decision makers, and anyone who needs general information on developing a data communications system can benefit from this seminar. Design problems will be presented as in-class exercises to reinforce learning. Solutions will be easier if attendees can bring pocket calculators. A special, technical knowledge of data communications is not a prerequisite, but a general familiarity with data processing is desirable.

## Course Materials

An extensive and detailed lecture outline is part of the seminar. Key points, equations, and much reference and tariff data are included, along with ample room for note taking. In addition, copies of all visual aids are included for subsequent reference.

## Please Post

## Course Outline

**Systems Overview—An Introductory Perspective**

A. Application Categories and Examples

B. Performance Categories, Their Characteristics, and the Design Approaches

C. Identification of System Components, Their Broad Function, and Their Interrelationships
   1. Terminals—Modems—Transmission Services—Line Protocols—Remote Concentrators—Front Ends—TP Software Modules

D. Terminal Classifications, Speed Characteristics, and Examples, from Teletypewriter through Intelligent Stand-Alone Terminals.

E. Modem categories and types

**Common Carriers—the Backbone of Data Communications**

A. FCC and State Regulations and Jurisdiction; the Importance of, and Tests for, Jurisdiction

B. Tariffs; Sources of Tariffs and Tariff Information

C. The Carriers
   1. Telephone Companies—Bell, Long Lines and Independents
   2. Specialized and Satellite Carriers
   3. Value-Added Carriers
   4. International Carriers

**Codes and Transmission**

A. Principal Codes—ASCII, EBCDIC, BCD

B. Asynchronous or Start/Stop Transmission, Synchronous Transmission

C. Character and Block Parity; Cyclic Redundancy Checking Codes (as in Binary Synchronous Communications

D. Full and Half Duplex Concepts; in Transmission Services; in Transmission Procedures

E. Characteristic Concepts of Switched vs. Private Line Services

# pts and Systems

F.  Concepts of Analog vs. Digital Transmission; Relative Error Rates

## Specific Pertinent Data Transmission Services

Emphasis on Quantitative Performance Characteristics, i.e., Bit Rates, Throughput Factors, Error Performance, Turnaround, Rate Structures

A.  Switched Services
    1.  DDD and WATS
    2.  Dataphone Switched Digital Service
    3.  Telenet Packet Switching including Concepts of Packet Switching and Access Schemes
B.  Private Line Services
    1.  Overview from Narrowband to Wideband
    2.  Rate Mileage Formula
    3.  Analog Voice Grade Channels including Bell's New MPL Tariff; Conditioning; Bit Rates, Turnaround
    4.  Dataphone Digital Service
    5.  Satellite Channels; Their Advantages and Disadvantages

## Line Control Procedures

A.  Binary Synchronous Communications (BSC) and Half Duplex Protocols in General
    1.  The Basic Standard of Contention and Polled Protocol—the IBM 2780
    2.  ETB—ITB—ETX and Turnarounds
    3.  RTS/CTS Delays and Their Effect
    4.  A Clustered Terminal Standard Protocol— the IBM 3270
B.  High Level Data Link Controls—IBM's Synchronous Data Link Control
    1.  Concepts and Frame Structure
    2.  Full Duplex Operations
    3.  The Acknowledgment Process
    4.  Effect on Satellite Channels

## Performance Analysis Techniques

A.  The Throughput Equation and its Component Factors; Application and Use
B.  Response Time
    1.  Service Time Concept
    2.  Facility Utilization Concepts
    3.  Wait-Time Formula
    4.  Response-Time Calculation

## Multiplexing and Concentration

A.  Basic Time Division Multiplexing
    1.  Split Stream Modems
    2.  Transparency but Low Efficiency
B.  Remote Concentrators
    1.  Their Particular Form of Multiplexing
    2.  Non-Transparency but High Efficiency
    3.  Other Functions for Concentrators
C.  Introduction to Statistical Multiplexers
D.  Biplexers, Duoplexers, Lineplexers

## Network Design Techniques and Tools

A.  Brainstorming Solutions
B.  Solution Evaluation
    1.  Performance Prediction
    2.  Pricing
C.  Tools
    1.  Pricing Programs
    2.  Queuing Models/Simulators; example of Simulation
    3.  Design Programs

## Introduction to Distributed Computing and Basic Networking, Needs and Concepts

A.  Needs, Practices, and the Issues
B.  Developments in Distributed Computing
C.  Systems Network Architecture and other Networking Approaches
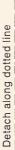
SEMINAR REGISTRATION FORM

# Data Communications

## An Introduction to Concepts and Systems

Please register the person(s) named below for the seminar checked below.

- ☐ Jan. 18-20, San Francisco
- ☐ Feb. 1-3, New York
- ☐ Feb. 15-17, Washington (Quality Inn)
- ☐ Mar. 1-3, Chicago
- ☐ Mar. 15-17, Philadelphia (Cherry Hill, NJ)
- ☐ Mar. 29-31, San Francisco
- ☐ Apr. 10-12, Washington (Ramada Inn)

Name of Registrant(s)

1. _____

2. _____

3. _____

4. _____

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Detach along dotted line

# About the Instructor

Ralph G. Berglund is a well-known management and technical consultant in data communications. A frequent speaker at corporate seminars and such industry meetings as the Info conferences, the Interface conferences, AMA seminars, CICA, ASM, and DPMA, Mr. Berglund is also the data communications editorial advisor to *Datamation* magazine, and the data communications consultant to Datapro Research Corporation.

Of his 18 years in the data communications field, 11 have been spent as a professional consultant, performing planning, design, and improvement of data communication systems, and analyzing and forecasting data communication trends. Prior to his affiliation with *Datamation,* he was the data communications advisor to *Modern Data* magazine for eight years, and authored most of the Communications Clinics which appeared in the magazine.

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